

Wednesday, 02/04/2008 3:39:41 PM
Julie Lecocq

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: X-TUBE MATERIAL		
Job Number	: 38345					
Estimate Number	: 12127					
P.O. Number	:		Part Number	: D6005180		
This Issue	: 02/04/2008	S.O. No. :	Drawing Number	: D6005 REV A		
Prsh Rev.	: NC		Project Number	: N/A		
First Issue	: / /	Type : LANDING GEAR	Drawing Revision	: A		
Previous Run	: 34687		Material	:		
Written By	:		Due Date	: 26/09/2008	Qty:	20 Um: Each
Checked & Approved By	: TD 08.04.03					
Comment	: Est Rev:C 04.06.15 Added tolerance to Step 2 KJ/JLM					

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	PG	PURCHASING	
		Comment: PURCHASING	
		Issue P/O: 6063	C 08/04/04 20
		a) Extrude as per Dwg D6005 length = 180" (Ref. D6005-180)	
		b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) Seamless aluminum tube	
		c) Minimum ultimate tensile strength = 77ksi	
		d) Minimum tensile yield strength = 66ksi	
		e) Material certification required	
2.0	D6005180P	Crosstube material	
		Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)	
		Crosstube extrusion	
3.0	PACKAGING 1	PACKAGING RESOURCE #1	
		Comment: PACKAGING RESOURCE #1	
		Receive & Inspect For Transit Damage	
		Ensure material certification is attached	
4.0	QC6	DIMENSIONAL CHECK	
		Comment: DIMENSIONAL CHECK	
		Ensure Material certification comply to Dwg D6005	
			C 08/04/04 20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE MATERIAL

Job Number: 38345

Part Number: D6005180

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

M 8-8-12

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



(20)

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

8-8-12

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock
Location: L6

M 8-8-12

8.0

QC21

FINAL INSPECTION/W/O RELEASE



(20)

Comment: FINAL INSPECTION/W/O RELEASE

D 08/08/14

MF 08-08-13

Job Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

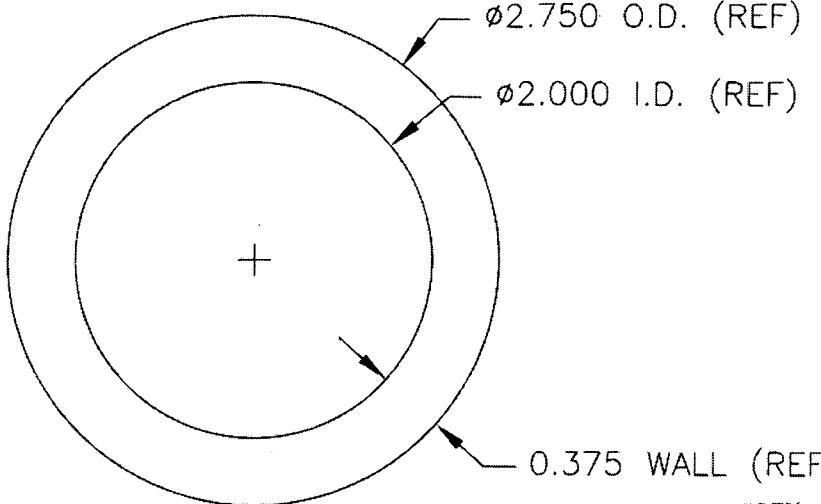
NOTE: Date & initial all entries

DART

DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17	TITLE CROSSTUBE MATERIAL		SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *SP*



NOTES

- 1) D6005-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 128" LONG TUBE: D6005-128

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *38345*

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.015 MEAN (± 0.038 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 996/08

Cert No. / No. du certificat:

PO00006063

Produkt: Rohre nahtlos gepresst

Product / Produit: Tubes seamless extruded

Bestellnummer:

Order No. / No. de commande:

29104/1

Auftrag:

Our Reference/Notre Reference:

-; AMS - QQ - A - 200/11E; -; -; Spezifikation Dart Aerospace D 6005

Spezifikation:

Specification:

Werkstoff: 7075

Alloy/Alliage:

Zustand: T 6511

Temper/État:

Abmessung 2,750 INCH x 2,000 INCH x 0,375 INCH x 180,000 INCH

Size / Dimension D6005-180 2.750 x 0.375 x 180

Siegler

Kennzeichnung ALUnna - Cert No. 996/08 - 7075 - T 6511 - Cast No. 81741 - AMS - QQA 200/11 - 2.750" OD X 0.375" Wall - Heat
Marking/Marquage: Lot No. 1798 - ALUnna Order Conf. No. 29104/1-1 PO. 00006063

Lieferung Stück kg

Delivered Material / Matériel délivré: 19 440,00

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
		0,40	0,50	1,2 2,0	0,30	2,1 2,9	0,18 0,28	5,1 6,1	0,20					
81741		0,07	0,14	1,46	0,04	2,47	0,19	5,83	0,04	0,01	0,03	0,01	0,01	0,01

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
	min. max.	77,0	66,0			
1	88,160	81,925	8,0			1798 - 19 pcs.
2	89,030	82,940	8,0			

**Ergebnis der
Prüfungen:** Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande





Aluminiumwerk Unna AG · Uelzener Weg 36 · D-59425 Unna

DART AEROSPACE LTD.
1270 Aberdeen Street
CDN K6A 1K7 HAWKESBURY
ON
Kanada

Aluminiumwerk Unna AG

Uelzener Weg 36 · D-59425 Unna

Postfach 11 46 · D-59401

fon +49 (0) 23 03-206 -0

fax +49 (0) 23 03-206-116

Petra@aluminiumwerk.com

www.aluminiumwerk.com

page: 1
date: 7.17.2008
customer: 40980

invoice

42659

your PO dated: 4.03.2008
your PO No.: P000006063
confirmation No.: 29104
Delivery note: 0042490 17.07.2008

contact: Petra Eisenblätter
Tel.: +(303) 755 5672
Fax: +(303) 755 5936
representative: CLAUS J. BETTER
Tax code 316/5702/0535

We supply acc. to our delivery terms and conditions:

item	quantity	unitprice	USD	unit	value	USD
001	19,000	PC	610,00	PC		11.590,00

AWU article: 19797 / Tariff no. 76082081

Customer article: D6005-180 2.750 X 0.375 X 180

product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	69,850 mm	Tol.	+0,300	-0,300
tol. for mean OD			+0,150	-0,150
inner diameter:	50,790 mm			
wall thickness:	9,530 mm	Tol.	+0,970	-0,970
fixed length	4572,000 mm	Tol.	+3,175	

inspection cert.acc. to EN10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,25 mm / 304,8 mm / RMS outer 25

tol. on quantity +10 % -10 %

2.750" OD 0.375" Wall, 180" lengths

Part Number D6005-180 crosstube

Surface Finish max. RMS 25

carried forward: 11.590,00

Commerzbank AG, Unna
Konto-Nr. 102 56 00 · BLZ 443 400 37
S.W.I.F.T. - Code: COBADE FF 443
IBAN : DE 90 4434 0037 01025600 00
Sitz der Gesellschaft: Unna
Amtsgericht Hamm: HRB 3045
Vorstand: Volker Findelsen (Vors.)
Thomas Wiese
Vorsitzende des Aufsichtsrats: Irene Wiese



invoice

42659

page: 2
date: 7.17.2008
customer 40980

Tolerances per ASTM B210 / your drawing D6005
Tubes protected with corrosion protective oil
Tubes line marked

Packing: seaworthy wooden cases

terms of delivery: DDP (Delivered, Duty, Paid)

Terms of payment: 30 days after date of delivery

delivery address:
DART AEROSPACE LTD.
1270 Aberdeen Street
CDN Hawkesbury, ONT, K6A1K7
Kanada

goods value:	11.590,00
total:	11.590,00

weight: gross 580,00 net 440,00
export exempt from tax - Country of origin: Germany

IMPORTER OF RECORD:
ALUMINIUMWERK UNNA-USA, INC.